

AMERICAN INTELLIGENCE.

OFFICIAL.

RECORD OF THE POST-MORTEM EXAMINATION OF THE BODY OF PRESIDENT J. A. GARFIELD, MADE SEPTEMBER 20, 1881, COMMENCING AT 4.30 P.M., EIGHTEEN HOURS AFTER DEATH, AT FRANKLYN COTTAGE, ELBERON, NEW JERSEY.

PRESENT and assisting, Dr. D. W. Bliss; Surgeon-General J. K. Barnes, U. S. Army; Surgeon J. J. Woodward, U. S. Army; Dr. Robert Reyburn; Dr. Frank H. Hamilton; Dr. D. Hayes Agnew; Dr. Andrew H. Smith, of Elberon (and New York); and Acting-Assistant-Surgeon D. S. Lamb, of the Army Medical Museum, Washington, D. C.

Before commencing the examination, a consultation was held by these physicians, in a room adjoining that in which the body lay, and it was unanimously agreed that the dissection should be made by Dr. Lamb, and that Surgeon Woodward should record the observations made. It was further unanimously agreed that the cranium should not be opened. Surgeon Woodward then proposed that the examination should be conducted as follows :—

That the body should be viewed externally, and any morbid appearances existing recorded. That a catheter should then be passed into the wound, as was done during life to wash it out, for the purpose of assisting to find the position of the bullet. That a long incision should next be made from the superior extremity of the sternum to the pubis, and this crossed by a transverse one just below the umbilicus. That the abdominal flaps thus made should then be turned back and the abdominal viscera examined. That after the abdominal cavity was opened the position of the bullet should be ascertained, if possible, before making any further incision; and that, finally, the thoracic viscera should be examined.

This order of procedure was unanimously agreed to.

The examination was then proceeded with, and the following *external appearances* were observed :—

The body was considerably emaciated, but the face was much less wasted than the limbs. A preservative fluid had been injected by the embalmer, a few hours before, into the left femoral artery; the pipes used for the purpose were still in position. The anterior surface of the body presented no abnormal appearances, and there was no ecchymosis or other discoloration of any part of the front of the abdomen.

Just below the right ear, and a little behind it, there was an oval ulcerated opening, about half an inch in long diameter, from which some sanious pus was escaping, but no tumefaction could be observed in the parotid region.

A considerable number of purpura-like spots were scattered thickly over the left scapula, and thence forwards as far as the axilla. They ranged from one-eighth to one-fourth of an inch in diameter, were slightly

elevated and furfuraceous on the surface, and many of them were confluent in groups of two to four or more. A similar but much less abundant eruption was observed sparsely scattered over the corresponding region on the right side.

An oval excavated ulcer about an inch long, the result of a small carbuncle, was seated over the spinous process of the tenth dorsal vertebra. Over the sacrum there were four small bed-sores, the largest about half an inch in diameter. A few acne pustules and a number of irregular spots of post-mortem hypostatic congestion were scattered over the shoulders, back, and buttocks. The inferior part of the scrotum was much discoloured by hypostatic congestion. A group of hemorrhoidal tumours, rather larger than a walnut, protruded from the anus.

The depressed cicatrix of the wound made by the pistol-bullet was recognized over the tenth intercostal space, three and a half inches to the right of the vertebral spines. A deep linear incision (made in part by the operation of July 24th, and extended by that of August 8th) occupied a position closely corresponding to the upper border of the right twelfth rib. It commenced posteriorly about two inches from the vertebral spines and extended forwards a little more than three inches. At the anterior extremity of this incision there was a deep, nearly square, abraded surface about an inch across.

A well-oiled flexible catheter, fourteen inches long, was then passed into this wound, as had been done to wash it out during life. More resistance was at first encountered than had usually been the case, but after several trials the catheter entered, without any violence, to its full length. It was then left in position, and the body disposed supinely for the examination of the viscera.

The *cranium* was not opened.

A long incision was made from the superior extremity of the sternum to the pubis, followed by a transverse incision crossing the abdomen just below the umbilicus. The four flaps thus formed were turned back and the abdominal viscera exposed. The subcutaneous adipose tissue divided by the incisions was little more than one-eighth of an inch thick over the thorax, but was thicker over the abdomen, being about quarter of an inch thick along the *linea alba*, and as much as half an inch thick towards the outer extremity of the transverse incision.

On *inspection of the abdominal viscera, in situ*, the transverse colon was observed to lie a little above the line of the umbilicus. It was firmly adherent to the anterior edge of the liver. The greater omentum covered the intestines pretty thoroughly from the transverse colon almost to the pubis. It was still quite fat, and was very much blackened by venous congestion. On both sides its lateral margins were adherent to the abdominal parietes opposite the eleventh and twelfth ribs. On the left side the adhesions were numerous, firm, well organized, and probably old;¹ on

¹ These adhesions, and the firm ones on the right side, as well as those of the spleen, possibly date back to an attack of chronic dysentery from which the patient is said to have suffered during the civil war.

the right side there were a few similar adhesions and a number of more delicate and probably recent ones.

A mass of black, coagulated blood covered and concealed the spleen and the left margin of the greater omentum. On raising the omentum it was found that this blood-mass extended through the left lumbar and iliac regions and dipped down into the pelvis, in which there was some clotted blood and rather more than a pint of bloody fluid.¹ The blood-coagula having been turned out and collected, measured very nearly a pint. It was now evident that secondary hemorrhage had been the immediate cause of death, but the point from which the blood had escaped was not at once apparent.

The omentum was not adherent to the intestines, which were moderately distended with gas. No intestinal adhesions were found other than those between the transverse colon and the liver, already mentioned.

The abdominal cavity being now washed out as thoroughly as possible, a fruitless attempt was made to obtain some indication of the position of the bullet before making any further incision. By pushing the intestines aside, the extremity of the catheter, which had been passed into the wound, could be felt between the peritoneum and the right iliac fascia; but it had evidently doubled upon itself, and although a prolonged search was made, nothing could be seen or felt to indicate the presence of the bullet, either in that region or elsewhere.

The abdominal viscera were then carefully removed from the body, placed in suitable vessels, and examined seriatim, with the following result:—

The adhesions between the liver and the transverse colon proved to bound an *abscess-cavity* between the under surface of the liver, the transverse colon, and the transverse meso-colon, which involved the gall-bladder, and extended to about the same distance on each side of it, measuring six inches transversely and four inches from before backward. This cavity was lined by a thick pyogenic membrane, which completely replaced the capsule of that part of the under surface of the liver occupied by the abscess. It contained about two ounces of greenish-yellow fluid—a mixture of pus and biliary matter. This abscess did not involve any portion of the substance of the liver except the surface with which it was in contact, and no communication could be detected between it and any part of the wound.

Some recent peritoneal adhesions existed between the upper surface of the right lobe of the liver and the diaphragm. The *Liver* was larger than normal, weighing eighty-four ounces; its substance was firm, but of a pale yellowish colour on its surface and throughout the interior of the organ, from fatty degeneration. No evidence that it had been penetrated by the bullet could be found, nor were there any abscesses or infarctions in any part of its tissue.

¹ A large part of this fluid had probably transuded from the injecting material of the embalmer.

The *Spleen* was connected to the diaphragm by firm, probably old peritoneal adhesions. There were several rather deep congenital fissures in its margins, giving it a lobulated appearance. It was abnormally large, weighing eighteen ounces; of a very dark, lake-red colour, both on the surface and on section. Its parenchyma was soft and flabby, but contained no abscesses or infarctions.

There were some recent peritoneal adhesions between the posterior wall of the *Stomach* and the posterior abdominal parietes. With this exception no abnormalities were discovered in the stomach or *Intestines*, nor were any other evidences of general or local peritonitis found besides those already specified.

The *Right kidney* weighed six ounces, the *Left kidney* seven. Just beneath the capsule of the left kidney, at about the middle of its convex border, there was a little abscess one-third of an inch in diameter; there were three small serous cysts on the convex border of the right kidney just beneath its capsule; in other respects the tissue of both kidneys was normal in appearance and in texture.

The *urinary bladder* was empty.

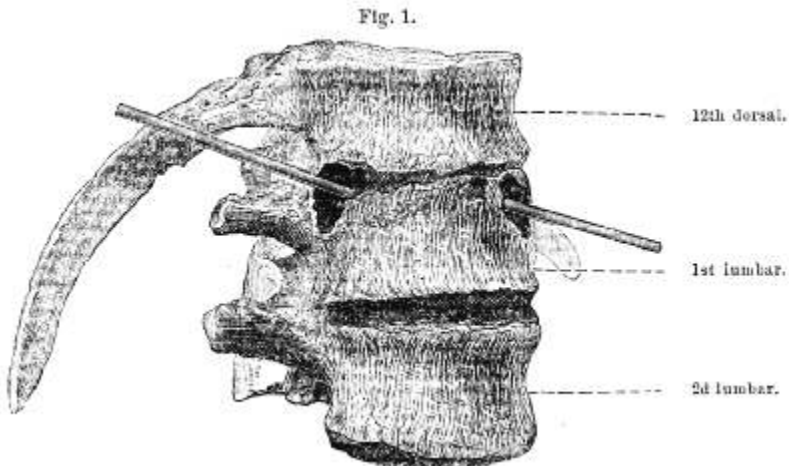
Behind the right kidney, after the removal of that organ from the body, the dilated *track of the bullet* was dissected into. It was found that from the point at which it had fractured the right eleventh rib (three inches and a half to the right of the vertebral spines) the missile had gone to the left, obliquely forwards, passing through the body of the first lumbar vertebra, and lodging in the adipose connective tissue immediately below the lower border of the pancreas, about two inches and a half to the left of the spinal column, and behind the peritoneum. It had become completely encysted.

The track of the bullet between the point at which it had fractured the eleventh rib and that at which it entered the first lumbar vertebra was considerably dilated, and the pus had burrowed downwards through the adipose tissue behind the right kidney, and thence had found its way between the peritoneum and the right iliac fascia, making a descending channel which extended almost to the groin. The adipose tissue behind the kidney in the vicinity of this descending channel, was much thickened and condensed by inflammation. In the channel, which was found almost free from pus, lay the flexible catheter introduced into the wound at the commencement of the autopsy; its extremity was found, doubled upon itself, immediately beneath the peritoneum, reposing upon the iliac fascia, where the channel was dilated into a pouch of considerable size. This long-descending channel, now clearly seen to have been caused by the burrowing of pus from the wound, was supposed during life to have been the track of the bullet.

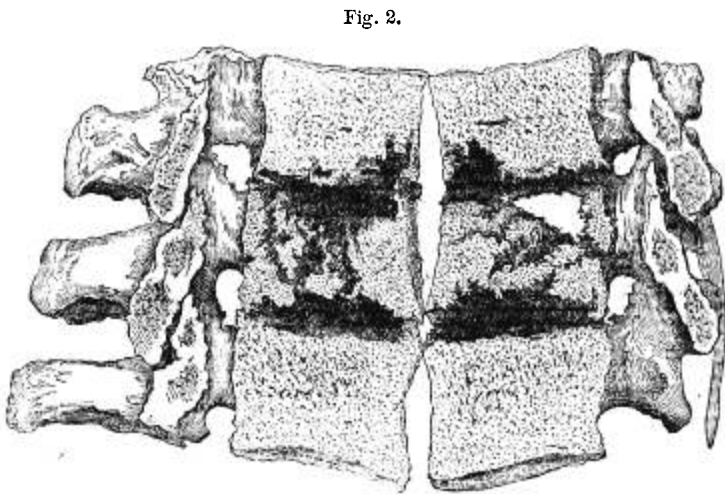
The last-dorsal, together with the first and second lumbar vertebræ and the twelfth rib, were then removed from the body for more thorough examination.

When this examination was made it was found that the bullet had penetrated the first lumbar vertebra in the upper part of the right side of

its body. The aperture by which it entered involved the intervertebral cartilage next above, and was situated just below and anterior to the intervertebral foramen, from which its upper margin was about one-quarter of an inch distant. Passing obliquely to the left and forwards through the upper part of the body of the first lumbar vertebra the bullet emerged



Shows the course of the ball through the first lumbar vertebra, its direction being indicated by the probe.



Shows the above specimen sawn open.

by an aperture, the centre of which was about half an inch to the left of the median line, and which also involved the intervertebral cartilage next above. The cancellated tissue of the body of the first lumbar vertebra was very much comminuted and the fragments somewhat displaced. Several deep fissures extended from the track of the bullet into the lower part of the body of the twelfth dorsal vertebra. Others extended through the first lumbar vertebra into the intervertebral cartilage between it and

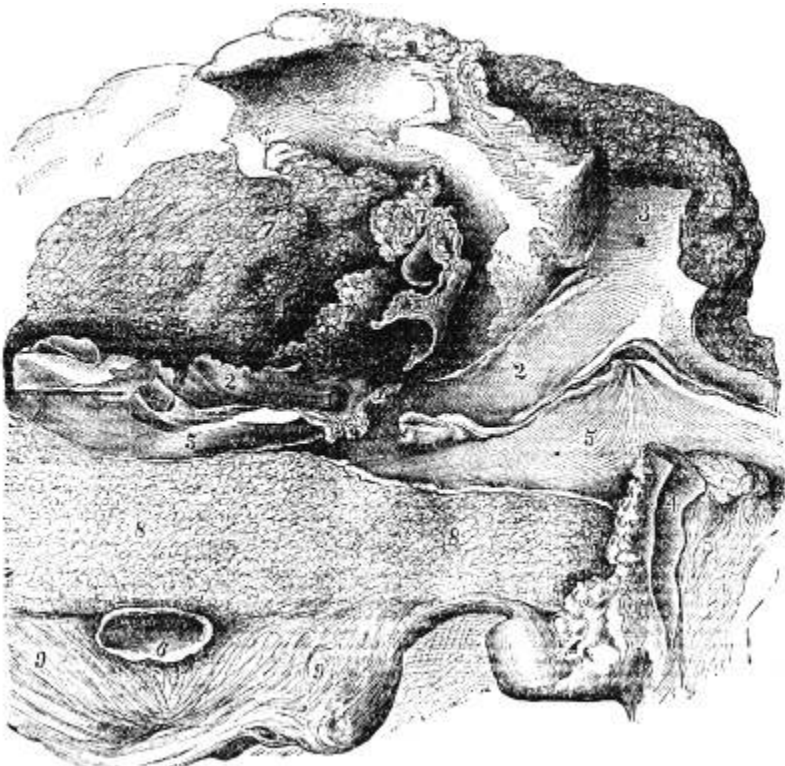
the second lumbar vertebra. Both this cartilage and that next above were partly destroyed by ulceration. A number of minute fragments from the fractured lumbar vertebra had been driven into the adjacent soft parts.

It was further found that the right twelfth rib also was fractured at a point one inch and a quarter to the right of the transverse process of the twelfth dorsal vertebra; this injury had not been recognized during life.

On sawing through the vertebra, a little to the right of the median line, it was found that the spinal canal was not involved by the track of the ball. The spinal cord and other contents of this portion of the spinal canal presented no abnormal appearances. The rest of the spinal cord was not examined.

Beyond the first lumbar vertebra the bullet continued to go to the left, passing behind the pancreas to the point where it was found. Here it was enveloped in a firm cyst of connective tissue, which contained besides the ball a minute quantity of inspissated, somewhat cheesy pus, which formed a thin layer over a portion of the surface of the lead. There was also a black shred adherent to a part of the cyst-wall, which proved on micro-

Fig. 3.



1. The point at which the splenic artery gave way. 2, 2. The splenic artery. 3. The celiac axis. 4. The superior mesenteric artery. 5, 5. The splenic vein. 6. The cyst in which the ball was found. 7, 7. A portion of the mass of extravasated blood. 8, 8. The pancreas. 9, 9. Adipose tissue behind the transverse meso-colon.

scopical examination to be the remains of a blood-clot. For about an inch from this cyst the track of the ball behind the pancreas was completely obliterated by the healing process. Thence, as far backward as the body of the first lumbar vertebra, the track was filled with coagulated blood, which extended on the left into an irregular space rent in the adjoining adipose tissue behind the peritoneum and above the pancreas. The blood had worked its way to the left, bursting finally through the peritoneum behind the spleen into the abdominal cavity. The rending of the tissues by the extravasation of this blood was undoubtedly the cause of the paroxysms of pain which occurred a short time before death.

This mass of coagulated blood was of irregular form and nearly as large as a man's fist. It could be distinctly seen from in front, through the peritoneum, after its site behind the greater curvature of the stomach had been exposed by the dissection of the greater omentum from the stomach, and especially after some delicate adhesions between the stomach and the part of the peritoneum covering the blood-mass had been broken down by the fingers. From the relations of the mass as thus seen it was believed that the hemorrhage had proceeded from one of the mesenteric arteries, but as it was clear that a minute dissection would be required to determine the particular branch involved, it was agreed that the infiltrated tissues and the adjoining soft parts should be preserved for subsequent study.

On the examination and dissection made in accordance with this agreement, it was found that the fatal hemorrhage proceeded from a rent, nearly four-tenths of an inch long in the main trunk of the splenic artery two inches and a half to the left of the celiac axis. This rent must have occurred at least several days before death, since the everted edges in the slit in the vessel were united by firm adhesions to the surrounding connective tissue, thus forming an almost continuous wall bounding the adjoining portion of the blood-clot. Moreover, the peripheral portion of the clot in this vicinity was disposed in pretty firm concentric layers. It was further found that the cyst below the lower margin of the pancreas, in which the bullet was found, was situated three inches and a half to the left of the celiac axis.

Besides the mass of coagulated blood just described, another, about the size of a walnut, was found in the greater omentum near the splenic extremity of the stomach. The communication, if any, between this and the larger hemorrhagic mass could not be made out.

The examination of the *Thoracic Viscera* resulted as follows:—

The *Heart* weighed eleven ounces. All the cavities were entirely empty except the right ventricle, in which a few shreds of soft, reddish, coagulated blood adhered to the internal surface. On the surface of the mitral valve there were several spots of fatty degeneration; with this exception the cardiac valves were normal. The muscular tissue of the heart was soft, and tore easily. A few spots of fatty degeneration existed in the lining membrane of the aorta just above the semilunar valves, and a slender clot of fibrin was found in the aorta, where it was divided, about two inches from these valves, for the removal of the heart.

On the right side slight pleuritic adhesions existed between the convex surface of the lower lobe of the lung and the costal pleura, and firm adhesions between the anterior edge of the lower lobe, the pericardium and the diaphragm. The *Right Lung* weighed thirty-two ounces. The posterior part of the fissure, between its upper and lower lobes, was congenitally incomplete. The lower lobe of the right lung was hypostatically congested, and considerable portions, especially towards its base, were the seat of broncho-pneumonia. The bronchial tubes contained a considerable quantity of stringy muco-pus; their mucous surface was reddened by catarrhal bronchitis. The lung-tissue was œdematous,¹ but contained no abscesses or infarctions.

On the left side the lower lobe of the lung was bound, behind to the costal pleura, above to the upper lobe, and below to the diaphragm by pretty firm pleuritic adhesions. The *Left Lung* weighed twenty-seven ounces. The condition of its bronchial tubes and of the lung-tissue was very nearly the same as on the right side, the chief difference being that the area of broncho-pneumonia in the lower lobe was much less extensive in the left lung than in the right. In the lateral part of the lower lobe of the left lung, and about an inch from its pleural surface there was a group of four minute areas of gray hepatization, each about one-eighth of an inch in diameter. There were no infarctions, and no abscesses in any part of the lung-tissue.

The surgeons assisting at the autopsy were unanimously of the opinion that on reviewing the history of the case in connection with the autopsy, it is quite evident that the different suppurating surfaces, and especially the fractured spongy tissue of the vertebra, furnish a sufficient explanation of the septic conditions which existed during life.

About an hour after the post-mortem examination was completed the physicians named at the commencement of this report assembled for further consultation in an adjoining cottage; a brief outline of the results of the post-mortem examination was drawn up, signed by all the physicians, and handed to Private Secretary J. Stanley Brown, who was requested to furnish copies to the newspaper press.

(Signed) D. W. BLISS,
“ J. K. BARNES,
“ J. J. WOODWARD.
“ ROBERT REYBURN,
“ D. S. LAMB.

As the above report contains paragraphs detailing the observations made at Washington on the pathological specimens preserved for that purpose, the names of Drs. F. H. Hamilton, D. Hayes Agnew, and A. H. Smith are not appended to it. It has, however, been submitted to them and they have given their assent to the other portions of the report.

¹ A part at least of this condition was doubtless due to the extravasation of the injecting fluid used by the embalmer.